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Administrator,

We are looking forward to convening our first monthly business review next week.

Hot issues

PFAS

On December 12, ORD hosted a teleconference with the Environmental Council of the States (ECOS), interested states and EPA scientists to share information on PFAS research and related state efforts. The agenda included presentations on Michigan's PFAS Executive Directive, Washington State's PFAS Action Plan, air deposition issues, and EPA's cross-agency effort to address PFAS.

Technical assistance to Region 8/Yellowstone National Park

On December 6, ORD held a call with Yellowstone's Old Faithful Water System (OFWS) Operators and EPA Region 8. OFWS experiences source water quality changes as a result of seasonal runoff that, for about two months of the year, require treatment changes in order to maintain surface water treatment goals. The source water also contains elevated arsenic levels. These operational changes negatively impact arsenic treatment effectiveness and, at times, the ability to meet the maximum contaminant level for arsenic of 10 µg/L. ORD provided suggestions on possible engineering process solutions for arsenic removal during the seasonal changes and strategies to evaluate them. The water system operators may follow-up with additional questions when they approach expected seasonal changes.

Cape Fear PFAS

On November 30, ORD visited Cape Fear Public Utility Authority (CFPUA) as part of EPA's PFAS treatment project. During this meeting, EPA and CFPUA agreed to continue to work together in the future. CFPUA will send EPA water samples to perform bench-scale treatment technology evaluations. The goal is to

further integrate CFPUA's work with Region 4. EPA tentatively plans to return to Cape Fear in February for a follow-up visit.

Last week Highlights

Linking Remediation to Community Benefits in Michigan

At the request of the Michigan Office of Great Lakes, ORD researchers were recently invited to a meeting of the Great Lakes Area of Concern (AOC) partners to provide guidance on tools and approaches that can help AOCs move from Remediation to Restoration to Revitalization (R2R2R). AOCs are geographic areas that have been designated under the Great Lakes Water Quality Agreement as significantly impaired for beneficial uses. These are restoration priorities in Michigan, which has 14 of the remaining 27 AOCs in the Great Lakes basin. The state has asked ORD for help to better understand R2R2R, with particular interest in looking at economic and public benefits of AOC clean-ups. During the next six months, Michigan and ORD scientists will plan and define specific activities.

EPA Research Cited in Testimony Regarding Proposed Legislation in Massachusetts

The Merrimack, Massachusetts (MA), River Watershed Council used findings from a 2015 [[HYPERLINK "https://ehp.niehs.nih.gov/1408971/"](https://ehp.niehs.nih.gov/1408971/)] in their discussion of a [[HYPERLINK "https://malegislature.gov/Bills/190/S448"](https://malegislature.gov/Bills/190/S448)] to require sewage treatment plants along waterbodies in MA to inform the public when raw sewage is released during Combined Sewer Overflow (CSO) events. The bill would also require the state to track and maintain data on CSO events on a public website. The 2015 study, published in *Environmental Health Perspectives*, found that extreme precipitation events were associated with a 13% increase in emergency room visits for gastrointestinal illness in the Massachusetts population receiving drinking water from CSO-impacted waterbodies. The Merrimack River, a source of drinking water and recreational opportunities for about 600,000 people, is regularly impacted by CSOs. The paper was co-authored by ORD and the University of Illinois, Chicago.

Tribal Science Council

During the week of Dec. 4, 2017, the Tribal Science Council (TSC) held its face-to-face meeting in Phoenix, AZ hosted by the Salt River Pima-Maricopa Tribe. The meeting provided opportunity for communication and networking among EPA and tribal scientists. We held training on EPA's lead curriculum that promoted collaboration between EPA tribal partnership groups. The TSC led discussions on EPA research efforts featuring tribally-led projects, tribal youth outreach, and a listening session to identify science and research needs focused on creating ORD opportunities for tribes. Discussions included tribal youth outreach and EPA research efforts (RARE and RESES) featuring tribally-led projects. A listening session was facilitated by ORD to identify science and research needs and opportunities for tribes to work with ORD.

Superfund

On December 11-12, ORD helped staff at the Delaware Department of Natural Resources use EPA's ProUCL tool to develop remediation screening levels for a waste site. ProUCL provides statistical methods and graphing tools to address environmental sampling and statistical issues at Superfund sites.

Small Business Innovation Research (SBIR)

The EPA SBIR-funded company, [[HYPERLINK "http://www.nanosafeinc.com/"](http://www.nanosafeinc.com/)], issued a press release late last month detailing how they had leveraged their "current Phase I EPA SBIR project entitled 'Mobile Analytical Platform for Lead Detection in Drinking Water' to obtain a matching

commercialization grant of \$50,000 from the Commonwealth Research Commercialization Fund (CRCF) offered by the Virginia-based Center for Innovative Technology (CIT). This CRCF matching grant provides additional resources to accelerate development and commercialization of NanoSafe's Mobile Analytical Platform, which will increase sensor resolution for the product currently under development. According to Nancy Vorona, CIT's Vice President of Research Investment, "NanoSafe is the only Virginia company to win an EPA SBIR Phase I award in 2017. Coupled with the additional support of CRCF, NanoSafe is a great example of a company with the potential to push the boundaries of innovation in the Commonwealth."

Grantee Publication

Researchers at the STAR [[HYPERLINK](#)

"https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/10443/report/0"] based at the University of Washington combined their expertise in synthetic and analytical chemistry, molecular and cell biology, and [[HYPERLINK](#)

"<https://insight.jci.org/articles/view/95978>"] showing that microfluidically linked organs-on-chips, aka "microphysiological systems" (MPS), can be used to identify organ-to-organ interactions in response to chemical toxicants. The authors successfully linked a kidney-on-a-chip with a liver-on-a-chip microfluidically to determine the mechanisms of bioactivation and transport of an established, plant-derived, nephro- or kidney toxin and human carcinogen. Environmental exposures pose a significant threat to human health. However, it is difficult to study toxicological mechanisms in human subjects due to ethical concerns. Microphysiological systems (organs-on-chips) provide an approach to examine the complex, species-specific toxicological effects of environmental chemicals using human cells.